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Metabolic burden in adolescents with secondary Functional Hypothalamic Amenorrhea: is the risk real?

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Context:Functional Hypothalamic Amenorrhea(FHA) due to physical or psychological stressors is a relatively frequent condition throughout reproductive life and a major worriment for many adolescents. Women and young girls end up with low estrogens for a long period; possibly losing their protective role in vascular function, bone mass and mentality. Additionally, being a diagnosis of exclusion, FHA during adolescence is difficult to be distinguished from normal pubertal signs.
Objective: We tried to evaluate the metabolic profile of adolescent with FHA and seek for differences between FHA and amenorrhoeic adolescents due to other causes.
Methods–Patients: Retrospective study of 95 files of adolescent girls, between 13 and 21 years old, who presented on their first appointment with secondary amenorrhea. Diagnosis was attributed to each patient after completion of laboratory and clinical investigation. Anthropometric, biochemical and imaging data were measured and analyzed.
Main Outcome-Results: Of 95 amenorrhoeic adolescents, 47,2% were diagnosed with FHA due to excessive exercise, dieting or psychological stressors, in which other amenorrhea causes were excluded. Polycystic ovary syndrome(PCOS) and close-to-menarche menstrual irregularities troubled the rest 52,7%. Mean time passed since menarche was 3,51 years and mean body mass index(BMI) 22,54. 16% of our amenorrhoeic sample stated weight loss and 7,4% intense training before the cessation of menses. Neither lipid profile nor BMI presented a statistically significant difference between FHA and other-cause amenorrhoeic patients. Even inside FHA group, long-term amenorrhea(>6 months) did not alter significantly lipids. Additionally, insulin resistance, as it is indicated by HOMA-IR is more favorable(p=0,048) in FHA adolescents, even after controlling for BMI; a result that was anticipated since the other group included PCOS patients.
Conclusions: Whereas hypoestrogemia during postmenopausal period is responsible for the increment of cardiovascular risk, little is known about hypoestrogemia in premenopausal women; let alone amenorrhoeic adolescents. This study did not demonstrate neither an unfavorable lipid profile nor an increased insulin resistance in patients with HFA, even those with long-term absence of menses. Greater sample and detailed follow up will help either verify or contradict the aforementioned findings and clarify the metabolic consequence of premenopausal hypoestrogemia in FHA adolescents.

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